What Is Claimed Is:

1. A safety system including an electronic key (4) that has a transmitter (6), and a protected object having a radio base station (8) which has a receiver (10), the transmitter (6) and the receiver (10) being designed in such a way that they communicate with one another in order to exchange authentication data,

wherein

the radio base station (8) regularly monitors the natural high frequency (HF) signal level received on the part of the receiver (10); and

the radio base station (8) detects interferences in the HF signal level, so as to make possible the detection of a relay station (16).

2. The safety system as recited in Claim 1,
wherein the radio base station (8) generates random samples of HF signal levels received via a plurality of frequency channels of the receiver (10).

3. The safety system as recited in Claim 2,
wherein the radio base station (8) carries out a noise test based on the random samples, in order to detect the interference.

4. The safety system as recited in Claim 3,
wherein the noise test conditions are considered to be satisfied if a number of the random samples exceed a predetermined threshold value.

5. The safety system as recited in Claim 3,
wherein the noise test is determined based on a Gaussian probability density function derived from the random samples.

6. The safety system as recited in Claim 1,
wherein the radio base station (8) records over a time period

a number of random samples for each of the frequency channels, in order to represent the natural HF signal level.

7. The safety system as recited in Claim 1, wherein the radio base station (8) and the key (4) execute an access protocol for transmitting the authentication data, and the access protocol includes the determination as to whether the access and/or the use of the protected object should be granted, based on the noise test.

8. The safety system as recited in any one of the preceding claims, wherein the protected object is a vehicle (1).

9. A communications method carried out by a safety system, including an electronic key (4) that has a transmitter (6), and a protected object having a radio base station (8) which has a receiver (10), the method including the transmission of authentication data from the transmitter (6) to the receiver (10), wherein the radio base station (8):

monitors the natural high frequency (HF) signal level received on the part of the receiver (10); and

detects interferences in the natural HF signal level, so as to make possible the detection of a relay station (16).